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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/578,789	02/21/2007	Takashi Muromachi	NSG-260US	8715
23122	7590	09/03/2008		
RATNERPRESTIA			EXAMINER	
P O BOX 980			ROBINSON, LAUREN E	
VALLEY FORGE, PA 19482-0980				
		ART UNIT	PAPER NUMBER	
		1794		
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/578,789

Applicant(s)

MUROMACHI ET AL.

Examiner

LAUREN ROBINSON

Art Unit

1794

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 February 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 5/9/2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-893)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date 5/9/2006.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being obvious over Nagai (US Pub. No. 2002/0054993).

Regarding claim 1: Nagai (US) teaches a laminated glass with heat shielding properties from the IR shielding particles (abstract). The reference teaches that the laminated glass is comprised of a plurality of glass plates (abstract) wherein each can be of the glass type which can block (cut) UV radiation (0055-0059). Therefore, the glass can be considered UV cut glass. Also, Nagai teaches that the glass sheets have a thickness of 1.2 to 5mm (0062) and comprised of total iron content in terms of Fe₂O₃ being 0.2-1% and FeO in terms of Fe₂O₃ being from 20 to 40% based on the total iron (0039).

Further, the laminated glass can have an interlayer between the glass sheets which contains IR cutting particles within (abstract) such as ITO (Figures, 0034), wherein the particles have diameters of 0.2 micron or less (abstract). The examiner notes that it would be recognized by one with ordinary skill that the reference disclosing that each particle has a diameter of equal or less than 0.2 microns that when the

average of all the diameters are taken, then that value as well will be at 0.2 or less microns.

Also, the reference teaches that the amount of particles within the interlayer is preferably 0.05 to 0.5mg in a 1cm^2 piece of glass due to the desire to minimize haze (0043-0048). Therefore, the reference teaches that the amount of ITO can be at 0.07mg for example and when 0.07mg in relation to a 1cm^2 piece of glass is used, the amount corresponds to $0.7\text{g}/\text{m}^2$ which is what is claimed by applicants.

Further, the examiner notes that the soda lime silica glass sheets that are described in the reference can be comprised of the same iron content as the applicants' claim as discussed, as well as a composition comprising 65-75% Al_2O_3 , 0.1-5% Al_2O_3 , 10-18% of Na_2O and K_2O together. 5-15% CaO , 1-6% MgO , total of CeO_2 and TiO_2 0.5-2% (0056), total of Fe_2O_3 being 0.2-1% and FeO in terms of Fe_2O_3 being from 20 to 40% (0039). The examiner notes that the applicants' in paragraph 0026 of their disclosure define that a suitable glass composition considered to be "UV green cut glass" is a composition comprising the same materials above at specific percentages of each material that fall within the above ranges.

Therefore, although the reference does not specifically disclose the applicants' label for the glass sheets, it is the examiner's position that since the ranges of the reference overlap the ranges which provide a UV cut green glass, the two glasses will have the same properties. Also, as illustrated in the transmission spectra in both the applicants' disclosure and the prior art, both glasses have a maximum transmission in the green wavelength region. **(Claim 1).**

Regarding claims 2-3: As discussed, Nagai teach the concentration as claimed in claim 2 (**Claim 2**) and that the interlayer comprised of a vinyl based resin (0028) (**Claim 3**).

Regarding claim 4: While Nagai (JP) as modified discloses the above teaching, Nagai *is silent regarding specifically that the use of the above green UV cut glass with the interlayer having the applicants' claimed amount has a haze value of 0.4% or less, a transmittance at 1500nm wavelength of 20% or less and a visible light transmittance for the standard light source A of 70% or more.*

While the above limitation is not taught, the examiner notes that the above optical properties of a laminate are result effective variables as it is known and illustrated by the examples and Figures of Nagai (US). The reference illustrates that the above properties can be adjusted by adjusting the mass of the ITO particles within the interlayer and adjusting the composition of the above mentioned materials comprising the glass sheets. Therefore, it would be recognized by one with ordinary skill that if desired to adjust the haze, 1500nm transmittance (Figures) and the visible transmittance to any values in order to provide for any overall optical performance, they would know how to obtain such results by varying the amount of ITO in the interlayer and the glass sheet concentrations to any value within the allowed range at the taught sheet thickness and through routine experimentation, one can obtain desired results. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Nagai (US) to include that the mass of ITO particles and the concentration of the glass sheets at the specific thickness can be optimized to any value in order to obtain any

desired 1500nm transmittance, haze and visible transmittance, including the applicants' claimed values in order to produce desired overall optical performance of the laminate.

Also, since it is illustrated as claimed by applicants' that the combination of claim 1 produces the values of claim 4 and it was discussed above that the glass of Nagai (US) can be that of applicants' including thickness and that the weight of ITO can be that of applicants, it is the examiner's position that through optimization of the two parameters above to any desired combination, that when the combination as claimed in claim 1 is produced, the values of claim 4 will inherently also be produced (**Claim 4**).

2. Claim 5 is rejected under 35 U.S.C. 103(a) as being obvious over Nagai (US Pub. No. 2002/0054993) in view of Nagai (JP 2002/326847).

Regarding claim 5: While the above teaching is disclosed, Nagai is *silent regarding an additional polyvinylbutyral within the interlayer with an insulating sound layer interposed between*.

While the reference does not include the above limitation, the reference does teach that the laminate can be used for a windowpane in vehicles (0085) and the examiner notes that it is known in the art that having sound insulation properties would be advantageous in such an application in order to keep noise on the outside of for example, a car window, out and maintain a suitable and pleasing environment within a vehicle. As such, it is the examiner's position that if one desired such a property they would look to the prior art to find suitable methods of obtaining such a property.

Nagai (JP) teaches a glass laminate for shielding IR radiation wherein two soda lime glass silica glass sheets (0034) can be used having an interlayer in between

(abstract). Nagai (JP) teaches that preferably the interlayer is comprised of a multilayer structure comprising two polyvinyl butyral layers (0008) with the ITO particles therein (0008, 0009). They teach that the laminate has a sound insulation layer provided between the two polyvinyl butyral layers (0013, Figures) in order to provide a pleasing environment when used in windowpanes for a vehicle for example (0012).

Nagai (US) and Nagai (JP) disclose analogous art regarding a glass laminate comprising two soda lime silica glass sheets with an interlayer comprising ITO heat shielding particles therein to be used for a windowpane in a vehicle. Since it is illustrated that both references disclose similar laminates for similar purposes, it is the examiner's position that during the search in the prior art as discussed above, one would find the teaching of Nagai (JP) as obvious. As such, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Nagai (US) to include that the interlayer can include a second polyvinylbutyral layer within a sound insulating layer in between poly layers in order to obtain a laminate suitable to provide sound insulating properties for applications such as a vehicle.

Consider the ITO particles amounting the claimed weight (surface density) within the modified interlayer

While the reference was modified above to include that surface density (weight) of the particles within the original interlayer can be optimized to any value in order to obtain suitable optical properties, one of ordinary skill for the same reasons above would recognize that after modification, if one desired to adjust the optical properties within, they could do so by optimizing the mass of the ITO particles in relation to any

desired surface area of the modified interlayer for the reasons above, which will provide any weight/surface density of the ITO particles amounting the interlayer such as applicants' claimed values, in order to obtain desired optical results. As such, it would have been obvious to one of ordinary skill in the art at the time of invention to further optimize Nagai (US) to include that with the addition of a second polybutyral layer and a sound insulating layer, the mass of the ITO particles can further be adjusted to any value with respect to the obtain surface area after modification and therefore, any weight/surface density of such particles can be obtained including applicants' amount, in order to obtain suitable optical results such as haze of the laminate (**Claim 5**).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LAUREN ROBINSON whose telephone number is (571)270-3474. The examiner can normally be reached on Monday to Thursday 6am to 4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carol Chaney can be reached on 571-2721284. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Lauren E. T. Robinson
Examiner
AU 1794

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